Amendm nts to th Claims

Claim 1. (Original): A semiconductor processing method, comprising:

forming an antireflective coating comprising Ge and Se over a substrate to be patterned;

forming photoresist over the antireflective coating;

exposing the photoresist to actinic radiation effective to pattern the photoresist, the antireflective coating reducing reflection of actinic radiation during the exposing than would otherwise occur under identical conditions in the absence of the antireflective coating; and

after the exposing, patterning the substrate through openings in the photoresist and the antireflective coating using the photoresist and the antireflective coating as a mask.

Claim 2. (Original): The method of claim 1 wherein the antireflective coating consists essentially of Ge and Se.

Claim 3. (Currently Amended): The method of claim 1 wherein the antireflective coating consists essentially of about 40 atomic ~~per cent~~ percent Ge and about 60 atomic percent Se.

Claim 4. (Original): The method of claim 1 wherein the antireflective coating is substantially amorphous.

Claim 5. (Original): The method of claim 1 wherein the antireflective coating comprises at least 30 atomic percent Ge.

Claim 6. (Original): The method of claim 1 wherein the antireflective coating comprises from 30 atomic percent to 50 atomic percent Ge.

Claim 7. (Original): The method of claim 1 wherein the antireflective coating comprises from 38 atomic percent to 42 atomic percent Ge.

Claim 8. (Original): The method of claim 1 wherein the photoresist contacts the antireflective coating.

Claim 9. (Original): The method of claim 1 wherein patterning the substrate comprises subtractive etching.

Claim 10. (Original): The method of claim 1 comprising after the patterning, removing substantially all the photoresist and antireflective coating layer from the substrate.

Claim 11. (Original): The method of claim 1 wherein the openings in the photoresist and the antireflective coating are formed by solvent processing of the photoresist after the exposing to form the photoresist openings, followed by dry etching of the antireflective coating through the photoresist openings.

Claim 12. (Original): The method of claim 11 wherein forming the openings in the antireflective coating comprises after said exposing, exposing the antireflective coating through the photoresist to radiation having a wavelength from about 190 nanometers to about 450 nanometers, and thereafter dry etching the antireflective coating in an oxygen comprising ambient.

Claim 13. (Original) A semiconductor processing method, comprising:

forming an antireflective coating comprising at least 30 atomic percent Ge and at least 50 atomic percent Se over a substrate to be patterned;

forming photoresist over the antireflective coating;

exposing the photoresist to actinic radiation effective to pattern the photoresist, the antireflective coating reducing reflection of actinic radiation during the exposing than would otherwise occur under identical conditions in the absence of the antireflective coating; and

after the exposing, patterning the substrate through openings in the photoresist and the antireflective coating using the photoresist and the antireflective coating as a mask.

Claim 14. (Original): The method of claim 13 wherein the openings in the photoresist and the antireflective coating are formed by solvent processing of the photoresist after the exposing to form the photoresist openings, followed by dry etching of the antireflective coating through the photoresist openings.

Claim 15. (Original): The method of claim 14 wherein the dry etching comprises exposure to oxygen at a temperature of at least 100°C.

Claim 16. (Original): The method of claim 14 wherein forming the openings in the antireflective coating comprises after said exposing, exposing the antireflective coating through the photoresist to radiation having a wavelength from about 190 nanometers to about 450 nanometers, and thereafter dry etching the antireflective coating in an oxygen comprising ambient.

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Claim 17. (Original): The method of claim 16 wherein said exposing of the antireflective coating through the photoresist to radiation having a wavelength from about 190 nanometers to about 450 nanometers occurs prior to said solvent processing of the photoresist.

Claim 18. (Original): The method of claim 16 wherein said exposing of the antireflective coating through the photoresist to radiation having a wavelength from about 190 nanometers to about 450 nanometers occurs after said solvent processing of the photoresist.

Claim 19. (Original): The method of claim 14 wherein the dry etching comprises exposure to an NH3 comprising plasma.

Claim 20. (Original): The method of claim 13 wherein the openings in the photoresist and the antireflective coating are formed by solvent processing of the photoresist after the exposing to form photoresist openings, followed by wet etching of the antireflective coating through the photoresist openings.

Claim 21. (Original): The method of claim 20 wherein the wet etching comprises exposure to an ammonium hydroxide comprising solution.

Claim 22. (Original): The method of claim 20 wherein the wet etching comprises exposure to a tetramethyl ammonium hydroxide comprising solution.

Claim 23. (Original): The method of claim 20 wherein the wet etching comprises exposure to a solution having a pH of at least 9.

Claim 24. (Original): The method of claim 13 wherein the antireflective coating consists essentially of Ge and Se.

Claim 25. (Original): The method of claim 13 wherein the antireflective coating is substantially amorphous.

Claim 26. (Original): The method of claim 13 wherein patterning the substrate comprises subtractive etching.

Claim 27. (Original): The method of claim 13 comprising after the patterning, removing substantially all the photoresist and antireflective coating layer from the substrate.

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Claim 28. (Original): A semiconductor processing method, comprising:

forming a silicon nitride comprising layer over a substrate;

forming an antireflective coating comprising Ge and Se over the silicon nitride comprising layer;

forming photoresist over the antireflective coating;

exposing the photoresist to actinic radiation effective to pattern the photoresist, the antireflective coating reducing reflection of actinic radiation during the exposing than would otherwise occur under identical conditions in the absence of the antireflective coating; and

after the exposing, subtractively etching the silicon nitride comprising layer through openings in the photoresist and the antireflective coating using the photoresist and the antireflective coating as a mask.

Claim 29. (Original): The method of claim 28 comprising after the patterning, removing substantially all the photoresist and antireflective coating layer from the substrate.

Claim 30. (Original): The method of claim 28 wherein the antireflective coating consists essentially of Ge and Se.

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Claim 31. (Original): The method of claim 28 wherein the antireflective coating comprises at least 30 atomic percent Ge.

Claim 32. (Original): The method of claim 28 wherein the antireflective coating comprises from 30 atomic percent to 50 atomic percent Ge.

Claim 33. (Original): The method of claim 28 wherein the antireflective coating comprises from 38 atomic percent to 42 atomic percent Ge.

Claim 34. (Original): The method of claim 28 wherein the openings in the photoresist and the antireflective coating are formed by solvent processing of the photoresist after the exposing to form the photoresist openings, followed by dry etching of the antireflective coating through the photoresist openings.

Claim 35. (Original): The method of claim 34 wherein forming the openings in the antireflective coating comprises after said exposing, exposing the antireflective coating through the photoresist to radiation having a wavelength from about 190 nanometers to about 450 nanometers, and thereafter dry etching the antireflective coating in an oxygen comprising ambient.

Claim 36. (Original): A semiconductor processing method, comprising:

forming an antireflective coating comprising Ge and Se over a substrate to be patterned;

forming photoresist over the antireflective coating;

exposing the photoresist to actinic radiation effective to pattern the photoresist, the antireflective coating reducing reflection of actinic radiation during the exposing than would otherwise occur under identical conditions in the absence of the antireflective coating;

after the exposing, patterning the substrate through openings in the photoresist and the antireflective coating using the photoresist and the antireflective coating as a mask; and

after patterning the substrate, chemically etching the photoresist and the antireflective coating substantially completely from the substrate using a single etching chemistry.

Claim 37. (Original): The method of claim 36 wherein the single etching chemistry is wet.

Claim 38. (Original): The method of claim 36 wherein the single etching chemistry is dry.

Claim 39. (Original): The method of claim 36 wherein the single etching chemistry is dry and comprises exposure to an oxygen plasma containing atmosphere.

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Claim 40. (Original): The method of claim 36 wherein the single etching chemistry is dry and comprises exposure to an oxygen plasma containing atmosphere.

Claim 41. (Original): The method of claim 36 wherein the antireflective coating consists essentially of Ge and Se.

Claim 42. (Currently Amended): The method of claim 36 wherein the antireflective coating consists essentially of about 40 atomic ~~per cent~~ percent Ge and about 60 atomic percent Se.

Claim 43. (Original): The method of claim 36 wherein the antireflective coating is substantially amorphous.

Claim 44. (Original): The method of claim 36 wherein the antireflective coating comprises at least 30 atomic percent Ge.

Claim 45. (Original): The method of claim 36 wherein the antireflective coating comprises from 30 atomic percent to 50 atomic percent Ge.

Claim 46. (Original): The method of claim 36 wherein the antireflective coating comprises from 38 atomic percent to 42 atomic percent Ge.

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Claim 47. (Original): The method of claim 36 wherein the openings in the photoresist and the antireflective coating are formed by solvent processing of the photoresist after the exposing to form the photoresist openings, followed by dry etching of the antireflective coating through the photoresist openings.

Claim 48. (Original): The method of claim 47 wherein forming the openings in the antireflective coating comprises after said exposing, exposing the antireflective coating through the photoresist to radiation having a wavelength from about 190 nanometers to about 450 nanometers, and thereafter dry etching the antireflective coating in an oxygen comprising ambient.